above particularized, does not confine its work of destruction to timber alone, but extends it to stone and other materials; it penetrates the wood when young, making an entrance of about a quarter of an inch in diameter, and enlarging it as it advances inwards and matures in growth, thus becomes imprisoned; it leaves off boring when full grown, and never extends its operations beyond reach of the water, from which it partly derives its sustenance. The lepisma attacks woods in the East-Indies immediately they are immersed in sea-water, and, though small, is very destructive in its operations, having been known to eat through the unsheathed bottom of a boat in three or four weeks. The small white worm last mentioned above, differs from the common ship-worm in its boring obliquely across the grain instead of lengthways; and its mode of operation consists in dissolving the substance of the wood rather than cutting into it, the harder woods offering the most obstruction to its progress, yet so far from sufficiently, "that a three-inch oak plank will be destroyed in eight years, by its action from the outside only." It appears as a small white soft substance like a maggot, but indistinct without a magnifier, and it is said not to live in the part of piling that is imbedded, or in any timbering situated above the tidal influence, that supply being necessary to its existence. These creatures yearly render necessary heavy repairs in the sea-dykes of Holland, from which we may imagine the Sampson-like achievement they might accomplish, if unheeded, amongst the piles whereon Amsterdam is built.

In the report before referred to, Mr. Pritchard disapproves of the use of Stockholm tar as a coating for marine timbering, considering it, in common with other tars containing vegetable matter, as detrimental to timber when exposed to salt water; and also, from its not penetrating the wood, being very soon eaten away by the salt acid of the sea. Common gas or coal-tar he also considers as doing much harm instead of good, forming a hard and brittle crust on the wood, which prevents "the damp and unnatural heat from the possibility of escape, owing to its containing ammonia, which burns the timber, and in a few years turns brown and crumbles into dust:" the pipe-worm, and others, he says, will destroy timber thus prepared in five or six years; and respecting such as has undergone the Kyanizing process, mentions a piece of heart of English oak in Shoreham Harbour, which was eaten to net-work by the worms in four years. For a sure defence against these assailants, he recommends the pyrolignite of iron and oil of tar, as specified by him for dry-rot. It appears that there has been used for years at the port of Liverpool, a wood called morn, or green-heart, the properties of which are well understood there, and which entirely resists the attacks of sea-worms; some of this timber seems also to have been imported into London within the last two or three years, but it is by no means generally known, although evidently it is of high importance that it should be so.

Besides worms, timber is exposed, chiefly in the Indies, to most dreadful havoc by some species of the ant tribe; from the destructive jaws of the termite or white ant there is nothing secure, unless it be of stone or metal; roofs, floors, and the other parts of buildings that are constructed of wood are infested by them, and when painted will present a solid appearance while they are completely hollowed; furniture and wooden utensils alike undergo their devouring ravages. The red ant of Batavia is another little devastator.

The following summary of the most approved formula for preventing and curing the evils of which we have treated, will, we believe, be acceptable to those interested in this particular subject; of course a recapitulation is avoided of those remedies which are already suggested by the tenor of our remarks:—

TO PRESERVE WOOD WORKS THAT ARE EXPOSED TO WET OR DAMP.

For those of an extensive nature, such as bridges, &c.—1. A coating of pitch and tar, strewed with powdered shells and sea sand, or smithy ashes, beaten small, is used by the Dutch, and found to be an excellent protection. 2. A paint composed of sub-sulphate of iron (the refuse of the copperas pans) ground up with any common oil, and thinned with coal-tar oil having a little pitch dissolved in it, is flexible and impervious to moisture. 3. Linseed oil and tar in equal parts, well boiled together, and used while boiling, rubbed plentifully over the work while hot after being scorched all over by wood burned under it, strikes an inch or more into the wood, closes the pores, and makes it hard and durable, either under or out of water. *For those of a more domestic nature*, a coating either of coal-tar or paint sanded over, are generally considered good defences; but they require renewal from time to time: the painting is most durable when sanded.

TO PREVENT ROT.

1. Boiling the wood for a few hours in sulphate of iron (green copperas), and leaving it for some days in a warm place to dry, renders it hard, compact, and impenetrable to moisture. 2. A very strong impregnation of common salt (muriate of soda) is a good protection where dryness is not an object. 3. Charring will fortify timber against external infection. 4. Coating with coal-tar will also serve that end: in both, the timber must have been thoroughly seasoned.

TO CURE INCIPIENT DRY ROT.

1. A pure solution of corrosive sublimate (corros. mur. of mercury) in water, in the proportion of an ounce to a gallon, used hot, is considered a very effectual wash. 2. A solution of sulphate of copper (blue vitriol), half a pound to the gallon of water, laid on hot, is another excellent wash, and cheaper than the preceding. 3. A strong solution of sulphate of iron is sometimes used, but is not thought such an effectual remedy as the copper. 4. A mixture of the solutions of copper and iron is occasionally adopted.

TO PREVENT WORMS IN TIMBER.

1. Anointing with an oil produced by the immersion of sulphur in aquafortis (nitric acid) distilled to dryness, and exposed to dissolve in the air, secures the wood, and imparts to it a not unpleasant odour. 2. An impregnation of lime is an excellent preservative, especially for sap-wood when in a dry situation. 3. Soaking in an infusion of quassia, by rendering the wood bitter, is a good protective. 4. The oil of spike is a good remedy. 5. The oils both of juniper and turpentine are efficacious in some degree. 6. *For small articles*, cover freely with copal-varnish or linseed-oil.

TO PREVENT WORMS IN MARINE TIMBERING.

1. A mixture of lime, sulphur, and colocynth with pitch, is a good protecting coat for boards. 2. Saturating the pores with coal-tar, either alone or after a solution of corrosive sublimate has been soaked and dried into the wood, also forms a good protection. 3. Sheathing with thin copper over tarred felt is esteemed the best protection for the bottom of ships from all marine animals; the joints should be stopped with tarred oakum. 4. Studding all the parts which are under water with short broad-headed nails soon covers the whole surface with a strong coating of rust, which is found to be proof against their penetration.

TO DESTROY THEM.

1. Rub the wood with poisonous ointments. 2. Whale oil is stated to have been applied with success.

TO DESTROY ANTS IN WOOD.

1. Kyanize the wood, corrosive sublimate being an effectual poison to them. 2. Arsenic is a good destructive. 3. Oils, especially essential oils, are good preventives. 4. Charring prevents their depredations. 5. Cajeput oil has been proved effectual for destroying the red ant.

WARMING RAILWAY CARRIAGES.—The Philadelphia correspondent of the *Chronicle* says:—"They are warming the passengers-cars on the railroad between New York and this city with hot water, in copper pipes along the floor and sides. These pipes proceed from a small boiler placed over the stove in each car—a capital invention."

NEW METHOD OF IMPELLING LOCOMOTIVES.—A patent has recently been obtained by Mr. G. C. Coffin, of Lunaford, Wilts, for certain improvements applicable to locomotive, marine, and stationary-engines. Mr. Coffin's proposed plan is an attempt to introduce the pendulum as a motive agent in machinery.

THE MUSEUM OF ECONOMIC GEOLOGY.

THE office of Mining Records and museum of Economic Geology is situated at Nos. 5 and 6, Craig's-court, Charing-cross. It is freely open to all persons every day in the year, except Sundays, Good Friday, and Christmas-day, with no other restriction than the visitor's writing his name in a book. The hours are from ten to four, from November to February inclusive; and from ten to five during the remainder of the year. The museum is in the department of the Commissioners of Woods and Forests, and is under the immediate direction of Sir Henry de la Beche, F.R.S., F.G.S., Mr. R. Phillips, F.R.S., being curator, and Mr. T. B. Jordan, keeper of the mining records.

It originated in a suggestion of the present director, who, in July, 1835, submitted to the Chancellor of the Exchequer that the persons employed upon the ordnance geological survey had opportunities of collecting specimens, and pointed out the advantage which would be derived from those specimens being arranged under the care of the Board of Public Works, and marked with the names of their localities referred to in corresponding maps. The specimens desired were of substances used in roads, for works, or buildings, and for useful and ornamental purposes in the arts, and from which useful metals are extracted. Apartments were allotted for the collection formed, and in February, 1837, Lord Duncannon, then Chief Commissioner of Woods and Forests, requested the present director to undertake the duties of the office, which he has since filled gratuitously, with zeal and ability. In 1839 Mr. R. Phillips was appointed to the office of curator; his duties being to make analyses on moderate terms, and to receive pupils for instruction. In the same year the place became the deposit of the mining records, Mr. T. B. Jordan being appointed keeper; the preparation of plans and sections, and of models of mines and machinery, in the workshops beneath the museum, being under his care. Permission is readily granted to make use of the plans and drawings, on application to the keeper, who is daily in attendance.

The building is easily recognized by the five granite-posts in front, which are specimens sent for those in the centre part of Trafalgar-square. Commencing near No. 5, the first post is from Aberdeen, the second from Peterhead, the third from Penryn, in Cornwall, the fourth from near Dublin, and the fifth from Dartmoor; only the two last are solid blocks. The museum consists of an entrance-hall, an apartment on the ground-floor, 46 feet by 18 feet 6 inches, a gallery on the first-floor, 103 feet long, and varying in width from 17 feet to 25 feet, a room on the second floor, a record-office, fitted up with folios and cases for plans, a private room for the director, a laboratory, and workshops.

In the room on the ground-floor, over the fire-place, is a painting on cement formed from the refuse of copper furnaces; it has a highly polished surface, and the capabilities of the composition are therefore hardly to be judged of on a small scale.* This room contains the specimens of building stones, procured by the commissioners appointed in 1838 to visit the different quarries for the purpose of selecting stone to be used in the new Houses of Parliament. These specimens are six-inch cubes, 197 in number, arranged according to their mineral composition, having the names of different buildings in which they have been employed labelled upon them, as well as the designation and locality. These are the specimens referred to in the report of the Building-stone Commission, dated August 27, 1839, No. 574, which document is already out of print. We find that the stones used in the Houses of Parliament are the following:—1. Oolite limestone, from Painswick, Gloucestershire, employed in the internal masonry. 2. Limestone of the oolite series, from Caen, Normandy, employed in the interior. 3. The magnesian limestone, from Steetly, Derby-

* In the *Athenæum* of July 22nd, 1843, we find the following:—"The Lady Chapel of the church of Saint Nicholas-des-Champs, Paris, has recently been enriched by a Christ, of colossal proportions, painted on lava, on a gold ground, by M. S. Perlet, after the manner of the Byzantine mosaics, which still adorn some of the Italian churches. This modern painting on lava is said to be one of the first essays of a kind peculiarly adapted, to a northern climate, by its presenting a surface enamelled by fire, and therefore proof against damp."